

# Claims

- [c1] 1.A rotatable antenna, comprising:  
a stationary antenna element having a vertical axis; and  
an RF reflector;  
the RF reflector arranged to be rotatable about the vertical axis of the antenna element.
- [c2] 2.The antenna of claim 1, further comprising a gear coupled to the RF reflector and a motor arranged to drive the gear and thereby rotate the RF reflector about the antenna element.
- [c3] 3.The antenna of claim 1, further including at least one RF absorbing element at one of a top of the RF reflector, a bottom of the RF reflector and the top and the bottom of the RF reflector.
- [c4] 4.The antenna of claim 1, further comprising a radome enclosing the antenna element and a rotational path of the RF reflector.
- [c5] 5.The antenna of claim 1, further comprising a fixed feed connection coupled to the antenna element.
- [c6] 6.The antenna of claim 1, wherein the antenna element

is at least one trace on a supporting substrate.

- [c7] 7.The antenna of claim 6, wherein the supporting substrate is a printed circuit board.
- [c8] 8.The antenna of claim 7, further comprising an antenna tuning circuit on the printed circuit board.
- [c9] 9.The antenna of claim 1, wherein the antenna element is metal.
- [c10] 10.The antenna of claim 1, wherein the antenna element has an omni-directional signal characteristic in a plane normal to the vertical axis.
- [c11] 11.The antenna of claim 1, wherein the RF reflector metal.
- [c12] 12.The antenna of claim 1, wherein the RF reflector is one of a metalized and a metal coated substrate.
- [c13] 13.The antenna of claim 1, wherein the RF reflector has two planar surfaces joined to each other at an angle.
- [c14] 14.The antenna of claim 1, wherein the RF reflector has a parabolic curve shape.
- [c15] 15.The antenna of claim 1, wherein the RF reflector has an elliptical curve shape.

- [c16] 16.The antenna of claim 1, further including a diplexer coupled to the antenna element.
- [c17] 17.The antenna of claim 1, further including a transceiver circuit coupled to the antenna element.
- [c18] 18.The antenna of claim 1, further including a motor control circuit.
- [c19] 19.The antenna of claim 17, wherein the motor control circuit is configured to rotate the RF reflector, monitor at least one signal strength and rotate the RF reflector to a first position where the at least one signal strength is maximized.
- [c20] 20.The antenna of claim 17, wherein a signal identifier may be input into the motor control circuit; the motor control circuit operable to rotate the RF reflector to a second position at which a signal corresponding to the signal identifier is maximized.
- [c21] 21.A rotatable antenna, comprising:  
an antenna element having a vertical axis;  
a RF reflector rotatable about the vertical axis of the antenna element, the RF reflector mounted on  
a gear coupled to  
a motor.

- [c22] 22.The antenna of claim 21, wherein the antenna element is a first trace on a printed circuit board.
- [c23] 23.The antenna of claim 22, wherein the first trace has a first plurality ground traces alternating with a first plurality of microstrip transmission lines.
- [c24] 24.The antenna of claim 23, wherein a second trace, electrically interconnected with the first trace at a short circuit proximate a top of the antenna element has a second plurality of ground traces alternating with a second plurality of microstrip transmission lines; the first trace and second trace arranged whereby each of the first plurality of microstrip transmission lines of the first trace are aligned in an electrically isolated overlay with each of the second plurality of ground traces of the second trace.
- [c25] 25.The antenna of claim 24 wherein a plurality of gaps along the vertical axis are located between each of the overlay of the first plurality of microstrip transmission lines of the first trace and the second plurality of ground traces of the second trace.
- [c26] 26.The antenna of claim 25 wherein a distance between a centerpoint of the gaps along the vertical axis is one half wavelength of a desired operating frequency.

- [c27] 27.The antenna of claim 21 wherein the gear is rotatably supported by a bearing ring.
- [c28] 28.The antenna of claim 21 wherein a radome surrounds the antenna and the RF reflector.
- [c29] 29.The antenna of claim 28 wherein the RF reflector is rotatably coupled to the radome at a top position proximate the vertical axis of the antenna element.